

THE  
PSYCHOLOGICAL BULLETIN

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## 1. GENERAL

1. TITCHENER, E. B., Wilhelm Wundt, 1832-1920. *Science*, 1920, 52, 500-502.

Psychology is fortunate in that Wundt lived at such a time that, although his labors overlapped those of the great standard-bearers of science of the middle of the nineteenth century, he still reaped the benefit of their pioneer labors, and that he lived sufficiently long to round out his work. The most original and constructive items of his published work are his "Beiträge zur Theorie der Sinneswahrnehmung" (1882); the *Untersuchungen zur Mechanik der Nerven und Nervencentren* (1871-1876); the second part (Methodenlehre) of the "Logik" (1883 and later); the "Psychologismus and Logizismus" (1910); and the little "Einführung in die Psychologie" (1911). The "Grundzüge der physiologischen Psychologie" is not a great book, although it is the standard work of reference for experimental psychology. In attempting to weld a highly imperfect nerve-physiology to a rudimentary experimental psychology, Wundt inevitably produced a mere encyclopedic handbook of the two disciplines. It represents only one side of his efforts. In the tremendous achievement of his old age, the "Völkerpsychologie," he maintains his intellectual freshness. The significance of Wundt's whole work lies in that he was the first considerable figure to attack the problems of philosophy and science from a psychological standpoint.

RICH (Pittsburgh)

2. BIRDIE, M. F., Scheme for Interchange of British and American Special School Teachers. *Training Sch. Bull.*, 1920, 17, 130-133.

Arrangements are being made whereby American teachers of special classes may go to England and have the best opportunities

of seeing and showing various methods. English teachers of special classes may come to America. For particulars apply to Miss M. F. Birdie, Education Office, Margaret Street, Birmingham, England.

E. MULHALL-ACHILLES

3. BAXTER, M. F. Opportunities for College Graduates in Psychological Examining in Social Service and Education. *J. of Applied Psychol.*, 1920, 4, 207-218.

A lecture given at the Vocational Conference, Vassar College, February, 1920. The profession of psychological examining is discussed. Positions and the requirements are mentioned.

E. M. ACHILLES

4. MILES, W. R., A Pursuit Pendulum. *Psychol. Rev.*, 1920, 27, 361-376.

The apparatus was originally used in testing aviation candidates, but it may also be useful in laboratory tests of ocular pursuit movements. It consists of a pendulum carrying a reservoir of water arranged so that a small stream flows from the lower extremity as the pendulum swings over a sink. The subject, seated before the sink, attempts to catch the water in a tubular cup of limited diameter (19 mm.); the test may be made more difficult by reducing the diameter of the cup. The quantity of water caught measures the efficiency of the pursuit movements. This quantity may be measured directly by means of a graduated float placed in the cup, or the total amount of water caught in a series of tests may be determined by pouring it into a large graduate. A special arrangement for facilitating measurement is figured. Also two diagrams illustrate the mechanisms for releasing the pendulum and for controlling its period. The author prints learning curves (10 women, 8 men) as illustrative of results obtainable with the pursuit pendulum.

YOUNG (Minnesota)

5. SCOTT COMPANY, Tables to Facilitate the Computation of Coefficients of Correlation by Rank Differences Method. *J. of Applied Psychol.*, 1920, 4, 115-125.

Tables are given to facilitate the computation of the coefficient of correlation by the rank difference method. The computer

first arranges his two series of measurements to be correlated in rank order. The difference between the two ranks is obtained and then the square of these differences computed. The table presented in this article gives the square of the differences from 0 to 80 by halves, *i.e.*, square of .5, 1.0, 1.5, etc., up to 79.5. These squares of differences are added giving  $\Sigma D^2$ . This sum,  $\Sigma D^2$  is found in the body of the second table of this article. The head of each column indicates the number of cases. Thus if 21 cases are ranked, one runs down the column headed 21 to find the entry nearest the obtained  $\Sigma D^2$  and then reads the entry on that horizontal line which is under the heading  $\rho$ . This entry,  $\rho$ , is the coefficient of correlation. Reprints of this article with the tables may be obtained from the *Journal of Applied Psychology*. Orders should be addressed to Miss Florence Chandler, Clark University, Worcester, Mass.

E. M. ACHILLES

6. BORING, E. G., Predilection and Sampling of Human Heights. *Science*, 1920, 52, 464-466.

A careful statistical study of men accepted for life insurance provides, among other things, a distribution of the heights of 221,819 men. The distribution curve contains a remarkable inversion that is difficult to explain except as an artifact. The peak of the curve is at 5 ft. 8 in., and there are fewer men recorded at 5 ft. 9 in. than at 5 ft. 10 in. The inversion occurs for ten of the thirteen age-groups taken separately. We appear to have a special predilection in favor of a height of 5 ft. 8 in. or 5 ft. 10 in., or both, which is a function simply of human preference for these heights. The instance shows the difficulty of obtaining an "unselected sample" merely by securing a large number of cases.

RICH (Pittsburgh)

7. MINER, J. B., Correlation. *Psychol. Bull.*, 1920, 17, 388-396.

A spirit of conservatism and caution in regard to intelligence test correlations animates numerous papers. Several writers urge the use of units of rank orders, in the estimating of mental abilities. (See, Boring, McEwen, Michael and the Scott Laboratory.) Ruml severely criticizes certain presumptions underlying statistical treatment of intelligence test results. Mitchell believes that memory span is not static for the same individual. Myers "cautions against individual or homogeneous group applications of

correlations between group and individual tests, found in groups including several grades and wide ranges of mental age"; and Thorndike shows the error in special ability estimates which is due to the "halo of general merit."

A paper by Thompson severely questions the validity of the whole theory of the use of coefficients. "Interference factors" the author believes, may operate in favor of one test, and against another, so that a zero coefficient may *not* prove total antagonism between two given factors or elements.

The general drift of several papers upon group, and general versus specific mental factors is summarized as follows: (1) A perfect hierarchy would demonstrate, as Spearman claims, that there is a *single* general factor and no group factors, except for quite similar activities and these of small effect. (2) An imperfect hierarchy would be explained by group factors with or without general factors. (3) Interference elements included in general factors, would account for any set of correlation coefficients. (Thompson.) (4) He is not certain whether the empirical data form a perfect hierarchy or only approach it. There seems a general tendency to accept important group factors. Thompson has severely shaken the hypothesis necessary to Spearman's General Common Factor.

McEwen and Michael present a method for determining the functional relation of one variable to each of a number of correlated variety, which has been found practically more useful than the classical methods in making predictions, especially with biological and social material. The method utilizes a successive approximative to group averages.

Short methods are presented in several papers. See Scott Company Laboratory, Burr, Chapman and Ayres.

Woods

## 2. NERVOUS SYSTEM

8. TROLAND, L. T., The Physical Basis of Nerve Functions. *Psychol. Rev.*, 1920, 27, 323-350.

The author presents a theoretical discussion of the physical nature of nerve action, based mainly upon the works of Nernst, R. S. Lillie, and Lucas. The following headings indicate the topics considered: (1) The general mechanisms of excitation and stimulation (2) The specific mechanisms of the threshold impulse



propagation, and other neural properties (3) The energetics of nerve processes (4) The basis of the all-or-none principle (5) The mechanism of the synapse (6) The mechanism of the receptor (7) Psychophysiological applications.

YOUNG (Minnesota)

9. ALLIS, EDWARD P., JR., The Branches of the Branchial Nerves of Fishes, with Special Reference to *Polydon spathula*. *Jour. Comp. Neurol.*, 32, 1920, 137-154.

The author has described in great detail the origins and ramifications of the branched cranial nerves in certain fishes, principally *Polydon spathula* of which he used one adult and two smaller specimens. Chief among his findings is that of the presence of additional typical branches of branchial nerves, the existence of which had not been definitely established. In comparing the nerve pits of *Polydon* with the pit organs of other species he finds anatomical evidence which tends to show that in *Polydon* there exists a primitive form of nerve sac or ampulla the functioning of which is difficult to interpret inasmuch as the habits and habitat of *Polydon* do not support the view that these organs report depth of water, direction of currents or vibrations of low frequency. Rather, the nerve pits seem to have been adapted for the purpose of aiding in the search for food. It is further possible that the nerve pits as found in *Polydon* represent the last stages in the displacement of one sense organ by another, during which displacement the responses are to the same stimulus but are themselves more specific.

WHEELER (Oregon)

10. DAWSON, A. B., The Intermuscular Nerve Cells of the Earthworm. Seven figures. *Jour. Comp. Neurol.*, 32, 1920, 155-172.

This article contains a brief review of the literature on the subject suggested in the title; a contribution to our knowledge of the size, form, distribution and positions of four types of intermuscular nerve cells in the earthworm tripolar; spindle-shaped bipolar; crescent-shaped bipolar; and long, slender, pyramidal or spindle-shaped cells—together with a discussion of the function of these cells. Such a study is of particular interest since in the earthworm we find a nervous system which represents a transitional

stage between the diffuse peripheral system of the lower invertebrates into the centralized deep-lying system of the higher invertebrates and vertebrates. The writer agrees with this theory, basing his belief upon the anatomical evidence and upon an evolutionary viewpoint; but he disagrees with former opinions as to the afferent or efferent nature of these intermuscular cells. Owing to their structure, staining properties, the appearance of the fibers, the distribution and spatial relation of the cells to the ventral cord, he concludes that the first three types of cells are most likely motor in function and represent outlying cells which, in the phylogenetic development of the nervous system, have not yet been incorporated in the ventral cord. The fourth type of intermuscular cell sends processes into the epidermis and therefore is believed to be sensory in function.

WHEELER (Oregon)

11. MOODIE, R. L., Microscopic Examination of a Fossil Fish Brain. Two figures. *Jour. Comp. Neurol.*, 1920, 32, 329-334.

The author was fortunate in obtaining a beautifully preserved paleoniscid fish brain; and had it prepared by the petrographic method for microscopic study. Examination of these sections showed a wide meningeal space with preservation of some of the meninges and blood vessels. These spaces were filled with vesicular calcite. The brain substance itself had been converted into incomplete crystals of calcite and phosphate which had obliterated all traces of organic structure.

WHEELER (Oregon)

12. DETWILER, S. R., and LAURENS, H., Studies on the Retina. The Structure of the Retina of *Phrynosoma cornutum*. Six figures. *Jour. Comp. Neurol.*, 1920, 32, 347-356.

The theory that the rod-filled retina is adapted chiefly to twilight vision and the cone-filled retina to diurnal vision receives possible substantiation from the examination of animal retinæ. The retina of lizards and turtles is peculiar in that, with few exceptions, it contains only cones. The retina of *Phrynosoma* was found to possess only cones and a prominent area centralis which contained a maximally developed fovea. In these respects the retina resembled that of other diurnal saurians. The cones exhibited a considerable variation in size, shape, structure and dis-

tribution. At the fovea they were much thicker, greatly attenuated, and cylindrical in form as compared with the conical form of those in the extra-foveal region. The pigment was extremely abundant and under ordinary conditions of illumination extended far down on the visual cells (even to the paraboloids), except in the fovea where only the outer segments of the cells were covered. The retina also had a highly vascular pecten which extended dorso-anterially about 1 mm. into the posterior chamber of the eye.

WHEELER (Oregon)

13. KUNTZ, A. and BATSON, O. V., Experimental Observations on the Histogenesis of the Sympathetic Trunks in the Chick. Three figures. *Jour. Comp. Neurol.*, 1920, 32, 335-346.

Here the chief purpose has been to throw more light upon the disputed origin of the sympathetic nervous system. The method consisted in destroying, at the end of 48 hours of incubation, just enough tissue along the dorsal aspect of the embryo to insure the elimination of the neural crest material without disturbing the ventral half of the tube. Seven embryos survived the operation two of which were killed at the end of 96 hours and the rest at the end of 120 hours. Results were found in harmony with those of Kuntz in the preceding number of this journal. The primordia of the sympathetic ganglia developed in the absence of spinal ganglia and dorsal nerve roots. However, when only the most ventral portion of the central nervous system is left intact, together with the ventral nerve roots, these primordia develop only to a slight degree and sometimes not at all. This suggests that while the primordia may develop in the absence of spinal ganglia and dorsal nerve roots, sections of the central nervous system aside from the ventral portion of the neural tube are essential for the proper development of sympathetic nerves. Perhaps those cells which normally give rise to sympathetic trunks are derived largely from those portions of the neural tube which, at the same time, give rise to lateral cell columns in the cord.

WHEELER (Oregon)

14. BLACK, D., Studies on Endocranial Anatomy. II. On the Endocranial Anatomy of *Oreodon* (*Merycoidodon*). Forty-eight figures. *Jour. Comp. Neurol.*, 1920, 32, 271-328.

The *Oreodons* have been described in the literature as primitive hog-like ruminants which were known to have inhabited North

America from upper Eocene to lower Pliocene times. The author bases his endocranial anatomy of these *Oreodons* on five casts taken from specimens which were originally found in North Dakota. In substantiation of the fact considerable knowledge concerning the cranial morphology of a fossil animal can be obtained from a study of endocranial casts, he points out that the surface of the brain leaves certain impressions upon the corresponding surface of the bone. This condition is best found in those adult animals whose growth shows early maturation. Since this early maturation does not occur in man to the extent that it occurs in the lower vertebrates these impressions are either absent or indistinct in the former. A restoration of the *Oreodon* brain reveals relatively large olfactory lobes and massive olfactory tracts or peduncles which make the rhinencephalon extend a considerable distance anterior to the neopallium. The neopallium characterizes the animal as a general, primitive ungulate, with very slightly developed association areas the function of which latter is conceivably that of associating a very highly specialized cerebellum with the cortical projection areas. The cerebellum is very highly specialized compared with the primitive neopallium and shows a plan of organization very similar to modern artiodactyls. The large size and specialized character of the cerebellum and the small, simply arranged neopallium give evidence of the apparent independence of these organs during phylogeny. But at the same time it is doubtful whether the cerebellum, as is sometimes thought, assumed entire control of the motor coördination of the animal. A fairly well developed convolution bordering the coronal fissure indicates that a neopallial efferent projection center had developed and was functionally active in *Oreodons*. There are numerous features of these brains which distinctly indicate the primitive character of the animal as compared with its modern relatives, namely: small volume of cerebrum, limited caudal expansion of neopallium, practical absence of pre-sylvian neopallial areas and the course of the internal carotid artery. There are also many features of the brain which show the artiodactyl traits of *Oreodon* as well as evidences in support of the view that it was a ruminating animal with accompanying suilline traits.

WHEELER (Oregon)

15. NITTONO, K., On the Growth of the Neurons Composing the Gasserian Ganglion of the Albino Rat, between Birth and Maturity. Five charts and one plate (twelve figures). *Jour. Comp. Neurol.*, 1920, **23**, 237-269.

Measurements were made of the largest ganglion cells in seventy-six gasserian ganglia taken from thirty-eight normal albino rats, and on ten of the largest fibers from four nerve roots in thirty-nine albino rats. These measurements were made at four day intervals beginning with the birth of the rats and at gradually increasing intervals up to 485 days, when the observations ceased. The growth of the ganglion cells shows three phases: (1) a rapid growing period which extends from birth to about 20 days; (2) a slower growing period which covers from 20-80 days (sometimes 100); (3) a period of much slower growth or even atrophy which extends to the end of the observations. Among rats of the same age, those individuals with heavier body weights have larger cell bodies, nuclei and fibers than those of lighter body weights. The cells assume an adult appearance about 20 days after birth. Further changes in the morphological character of the cells is confined to an increase in size of both cell body and nucleus and in quantity of Nissl substance. The volume of the ganglion cells increases at the same rate as the area of head surface in younger animals, before 80 days of age but beyond this age the growth of the neurons becomes relatively much slower than the growth of the head. From the 18th day on the areas of axis cylinders keeps pace with the growth of the head but prior to this time the head growth is relatively more rapid. The ratios between the diameters of the nerve fibers and the diameters of the ganglion cells decrease with increasing body weight for the reason that after puberty there is a longer continued growth in diameter of the fiber compared with that of the ganglion cells.

WHEELER (Oregon)

16. KUNTZ, A., The Development of the Sympathetic Nervous System in Man. Thirty-one figures. *Jour. Comp. Neurol.*, 1920, **32**, 173-230.

Much of our knowledge concerning the development of the sympathetic nervous system has been derived from studies on lower vertebrates with the result that many major problems in connection with the development of the human sympathetic system have never been adequately settled. After briefly reviewing



the literature the author describes in detail the results of his extended studies of human embryos. Chief among the major problems in this field is the question whether the sympathetic nervous system is derived wholly from the cerebro-spinal ganglia (or neural crest) or partly from this region and partly from the ventral half of the neural tube. In other words, is the origin of the entire sympathetic nervous system due to outward migrations over sensory routes or to outward migrations over both sensory and motor routes. A second problem is the question whether the sympathetic system is built up upon unit cells which migrate from the cord or whether it is derived in part from these cells as such and in part from mitotic division of migrant cells. The findings of the author, which are assumed to possess greater validity than those of certain former investigators, owing to a more improved technique, lead him to conclude that on the whole, the sympathetic nervous system is derived from cells which advance peripherally along both the dorsal and the ventral roots of the spinal cord and further, that not all of these cells migrate as such from the cerebrospinal system to the positions of the sympathetic primordia. Many cells of the sympathetic system are observed to originate by mitosis along the paths of migration and even after the original cells have reached the primordia of the sympathetic ganglia.

WHEELER (Oregon)

### 3. SENSATION AND PERCEPTION

17. FRÖBES, J., Aus der vorgeschichte der psychologischen Optik. *Zeits. f. Psychol.*, 1920, 85, 1-36. (Festschrift zum 70 Geburtstag von Prof. Dr. G. E. Müller.)

After a brief discussion of the optical theories of the Greek philosophers, the author reviews at some length the work of Alhazen and his two commentators, Witelo and Roger Bacon. Their surprising modernity of outlook is duly praised. "The doctrine of color perception was still very modest in its reliance on facts, even more on usable explanations. There are not even preliminaries for a color theory. Even such fundamental knowledge as the correct arrangement of colors on the color-square had to wait for Leonardo da Vinci. Space perception was in a better position. True such an essential point as the retinal images remained for Scheiner to demonstrate, but with the substitute theory of the lens-image, the fundamental lines of a correct theory were marked out."

ENGLISH (Wellesley)

18. FERREE, C. E. and RAND, G., The Limits of Color Sensitivity: Effect of Brightness of Preexposure and Surrounding Field. *Psychol. Rev.*, 1920, 27, 377-398.

The authors have studied the limits of the retinal color zones for red, yellow, green, and blue, in relation to the brightness of the preexposure (or surface exposed immediately before the color stimulus) and the brightness of the surrounding field. These factors modify the apparent color through the effects of after-image and contrast. Each of these factors is studied separately as well as the combined effect of the two. The principle result is that the retinal color zones are widest in extent when the brightness of the preexposed and surrounding fields is equal to that of the color stimulus. Hence in clinical or laboratory work standardization could be brought about by keeping the preexposure and surrounding field of the same brightness as the color stimulus. It is found that in some meridians the combined effect of these factors may narrow the zone as much as 20 degrees. The relative effects of black and white upon the limits of color sensitivity are compared in four tables and six charts. The work is part of a more general study of the variable factors which influence the chromatic response of the retina.

YOUNG (Minnesota)

19. PRATT, C. C., Highest Audible Tones from Steel Cylinders. (Minor Studies from the Psychological Laboratory of Clark University. XXIV. Communicated by Edwin G. Boring.) *Amer. J. of Psychol.*, 1920, 31, 403-408.

A set of twenty-two steel cylinders, giving frequencies for three octaves of the natural diatonic scale from  $C^5 = 4096$  to  $C^8 = 32,768$ , was used to determine the upper limit of hearing. The frequencies are calculated by the manufacturer, and appear to be slightly too high. Calibration by the Kundt dust method proved unsuitable.

The tonal TR of sixteen observers was determined. The differences between observers were much greater than the variations of a single observer from judgment to judgment. In general the cylinders indicated that the limen is less than 20,000 vs. The oldest observer had the lowest limen, but there were no other evidences of age differences. The results obtained contrasted strikingly with results from the Galton whistle in that doubtful judgments with the cylinders were unusual. Although intensity was a factor, its control did not appear to be difficult. The set of

cylinders may be used to demonstrate the upper limit of hearing before small classes.

RICH (Pittsburgh)

20. JONES, A. I., The Sounds of Splashes. *Science*, 1920, **52**, 295-296.

RICH (Pittsburgh)

21. DIMMICK, F. L., An Experimental Study of Visual Movement and the Phi Phenomenon. *Amer. J. of Psychol.*, 1920, **31**, 317-332.

The aim of the experiment was to put the alleged elementary movement experience described by Wertheimer (the Phi phenomenon) under critically descriptive conditions and to test its analyzability. A Dodge tachistoscope, modified by the addition of a third stimulus-field, was used in the experimental work, and the conditions described by Wertheimer were duplicated. The observers were instructed in half the series to report, in strictly psychological terms, upon the processes that they experienced; in the remaining series they were to characterize the perception (state its meaning). The two principal stimuli employed were those that gave movement from an oblique to a horizontal position, and from an upper horizontal to a lower horizontal position.

Optimal movement (movement of a line all the way from one position to other) was obtained in a majority of the exposures, and partial movement of one or both members in all save a small fraction of the remainder. No uniform influence of the pre- and infra-exposure field appeared. A time-interval of 90σ between the stimuli produced the highest average percent of optimal movement. The characterizations (under the "meaning" instructions) were paralleled by a series of "process" reports, which gave the psychological correlate of the perception of movement. This correlate was always a flash of grey. In the case of optimal movement it extended from one position of the line to the other; in partial movement it filled only a portion of the intervening space. The use of colored stimuli did not change the quality of the grey, but the brightness of the background affected its brightness in the opposite direction. There is no movement in the grey flash; the space is constant; the integration is one of time and quality.

RICH (Pittsburgh)

22. WOOLBERT, C. H., Effects of Various Modes of Public Reading, *J. of Applied Psychol.*, 1920, 4, 162-185.

The study attempts to bring the numerous problems of oral expression and public reading into the laboratory. The method used was based upon a study of the relation between *changes* in the use of the voice and specified responses of auditors; that is, the effects of various modes of public reading, employing different combinations of changes in the use of attributes of sound while reading. The attributes of sound are pitch, intensity, time and timbre. The conclusions show a presumption in favor of using an extreme degree of change in all four attributes especially for the purpose of securing retentiveness over an extended time. The four attributes differ in their effect upon the responses to oral reading. The results conform to generally accepted judgments.

E. M. ACHILLES

23. WALLIN, J. E. W., Congenital Word Blindness—Some Analyses of Cases. *Training Sch. Bull.*, 1920, 17, 76-84, 93-99.

The article contains an analysis of some of the data gathered on 95 consecutive cases from St. Louis examinees whose reading disability has been attributed to visual aphasia or dyslexia. Word Blindness means inability to understand or interpret written characters. It is a form of asymboly which affects the imaging, remembering and interpretation but not the perception of printed symbols.

The word-blind cases as a group did not present any visual or auditory sense defects. The tests did not reveal any peculiar defects in auditory or visual imagery, apart from possible defect in visual word imagery. A selected bibliography is appended.

E. MULHALL ACHILLES.

24. JONES, L. A. and REEVES, P., The Physical Measurement and Specification of Color, *Psychol. Rev.*, 1920, 27, 453-465.

Color may be measured synthetically by means of a color wheel, or analytically through an exact determination of the composition of physical radiation. In the synthetic method it is important to know the physical specification for the materials used. This specification may be given by separating the radiation into its components and measuring the intensity of the individual elements with a spectro-radiometer. The composition of any radiation may be shown by means of a spectral energy curve in which energy is

plotted as ordinates against wave length plotted as abscissae. Methods of making such determinations are briefly described.

YOUNG (Minnesota)

25. BORING, E. G., The Control of Attitude in Psycho-physical Experiments. *Psychol. Rev.*, 1920, 27, 440-452.

Starting from an article by Dr. Godfrey H. Thomson (*Psychol. Rev.*, 1920, 27, 300-307) the author discusses the exclusion of doubtful and reflective judgments; the establishment of definite criteria of judgment; the elimination of the stimulus error; the independence of the single judgment; the nature of the psychometric functions.

YOUNG (Minnesota)

26. POLLOCK, L. J., Nerve Overlap as Related to the Relatively Early Return of Pain Sense Following Injury to the Peripheral Nerves. Ten figures. *Jour. Comp. Neurol.*, 1920, 32, 357-378.

The author's investigation of 500 hospital patients with peripheral nerve lesions is aimed at alleged evidence in favor of the protopathic and epicritic types of cutaneous nerve fibers. Sensitivity to light pressure was determined by the use of wisps of cotton. The sensation of pain was aroused by using a weighted needle sliding between a bit of glass tubing so that with different weighted needles a pressure of from 5-35 grams could be applied. The purpose of the investigation did not seem to warrant a finer technique, since the author's chief object was to ascertain the reason for the dissociated return of the pain sense. Hair sensibility was eliminated by close shaving; pressure-pain was avoided by taking care that the only responses to pain were those from the prick of a sharp point. The entire investigation showed that the dissociated return of pain is undoubtedly due to nerve overlapping and not to the early regeneration of a so-called protopathic sensibility, for (1) following the section of a mixed nerve the complete loss of sensibility to pain is far less than the loss of tactile sensitivity; (2) the early and dissociated return of pain occurs in areas which are constant for each individual nerve; (3) the areas in which this dissociated return of pain was observed were always along the borders fed by adjacent uninjured nerves; (4) when the nerves which supplied these adjacent areas were severed, sensitivity to pain in these border areas disappeared; (5) the pain sense did not return within the time usually allotted for the regeneration of the



"protopathic" sense; (6) this possible overlapping was demonstrated as a likely cause for the early return of dissociated pain sensitivity in case of the radial nerve; (7) in all cases of resection and suture of a nerve, when sensitivity to pain was present in border areas, these areas remained, on the whole, as they were prior to the operation, showing that the pain sense existing before the operation could not have been due to a partial regeneration of the nerve. Thus in no instance where there could not have been an overlapping of adjacent nerves was there an early and dissociated return of the pain sense; and conversely, wherever there was possibility of overlapping, this so-called protopathic pain sensibility was present. While the question still remains, so far as this investigation is concerned, of the two sets of nerve fibers—the protopathic and epicritic—one can no longer see how the early and dissociated return of pain can be used as evidence in favor of the two sets of cutaneous fibers.

WHEELER (Oregon)

## 5. MOTOR PHENOMENA AND ACTION

27. WHEELER, R. H., Theories of the Will and Kinesthetic Sensations. *Psychol. Rev.*, 1920, 27, 350-360.

Theories of the will may be classed under the following headings: (1) *Totally reductive theories* or those reducing will to a peculiar order of sequence of sensations, images and affections (Münsterberg, Ebbinghaus); (2) *Non-reductive theories* or those admitting a unique and elementary will process (Lotze, Ach and Michotte, James); (3) *Partially reductive theories* which are intermediate between (1) and (2) (Herbart, Lipps, Stout, Calkins, Ach and Michotte, Meumann, Bain, Wundt, Fouillée); (4) *Behavioristic theories* or those laying emphasis on the coördinated responses of the organism to its environment (Ribot). The partially reductive theories have failed to reduce conation, striving, feelings of activity, force, strain etc., to a common process; but such experiences, the author believes may be reduced to kinesthetic sensations. Hence extreme variations in theories of will are referable to differences of interpretation placed upon a consciousness made up largely of kinesthetic sensations.

YOUNG (Minnesota)

28. GARTH, T. R., Racial Differences in Mental Fatigue. *J. of Applied Psychol.*, 1920, 4, 235-244.

Tests reported in the Archives of Psychology No. 41 are given also to Indians and negroes. The difference between whites, Indians and negroes of equal educational opportunity in the matter of mental fatigue shows the Indians excel the whites and negroes in the curve representing fatigue in attempts and accurate performance; the whites excel the negroes.

E. M. ACHILLES

29. ESTERLY, C. O., Limitations of Experiment in Explaining Natural Habit, as Illustrated by the Diurnal Migration. *Science*, 1920, 52, 307-310.

It has been found that the marine plankton animals are more abundant at higher levels at night, and at lower levels by day, and the phenomenon has been considered evidence of a diurnal migration. A number of explanations of such movements have been attempted, but their generality has not been established. The writer studied experimentally the reactions of these organisms. For only one species did he obtain data that showed why the diurnal movement takes place. The experiments did, however, bring to light matters affecting the interpretation of experimental results as applied to an explanation of a 'natural habit.' The behavior of the various species shows such marked specificity that no general explanation of the migration is possible. There is something connected with either the removal of specimens from the sea or their retention in the laboratory that affects the responses in some cases. Specimens of the same species, but obtained from different locations or habitats, show noteworthy differences in behavior. It does not seem possible that the facts of diurnal migration (or any other 'natural habit') can be obtained without both laboratory and field studies. The results of work in the field will show what the animals do in their natural surroundings, while experimental work *may* show why they act as they do.

RICH (Pittsburgh)

30. WHITE, W. A., Extending the Field of Conscious Control. *Ment. Hyg.*, 4, 1920, 857-866.

The study of hidden motives which control our conduct has but just been begun, and "so long as these motives lie wholly

without the field of consciousness, so long is the individual their creature instead of their master." The author presents several illustrations of the way things go wrong because of the unconscious motives actuating conduct. In order to get at these hidden motives the field of consciousness must be enlarged to include lost associations. A man in business, for example, may have a dangerous rival whom he wishes were dishonest and finally this wish is believed in. In this and other ways we approach all our problems of living with a bias. Education should be made more a process of unfolding rather than of repressing. The new psychology that teaches us to turn our vision within and to find the cause of our troubles in ourselves rather than in our environment has proved itself successful. Extending the field of consciousness control is the process of realizing, for oneself, the mechanisms by which we distort the real causes of our troubles. It is the principle of "open covenants openly arrived at," applied to the individual.

WHEELER (Oregon)

31. MARTIN, E. G., On Strength Tests. *J. Amer. Med. Ass.*, 1920, 75, 880.

(This is a summary and comments on an article appearing in Public Health Reports, 35, 1895.) Persistent exposure to temperature above 30° C. is unfavorable to strength. Relative humidity between 70 and 80 favor high strength showing. Other climatic influences seem not to be operative. Effects of fatigue persist from day to day. Extreme fatigue one day is followed with mild fatigue the following day, even though there has been no additional exertion. The most pronounced indications of fatigue are presented in an operation requiring close concentration and care or in a disagreeable environment.

SYLVESTER (Drake)

## 6. ATTENTION, MEMORY AND THOUGHT

32. ACHILLES, E. M., Experimental Studies in Recall and Recognition. *Arch. of Psychol.*, No. 44, pp. 80, New York, September, 1920.

Experiments on recall and recognition of pictures, geometrical forms, words, syllables and proverbs were performed on normal children and adults of different ages and on insane subjects. Materials, processes and subjects are compared. Superior scores in

recognition are shown to vary with associative richness and degree of determination to remember. The influence of intention varies with the process and the materials, being greater for recall and for meaningful material. Primacy and recency are less effective with recognition and with meaningful materials than with recall and with material devoid of associations. Color and size variations are ineffective. There is but little correlation between recognition and recall or between different materials. No marked sex differences in achievement nor in variability were found, the tendency being however toward superior records for the women. Insane patients show no differential modification of recall or recognition. Both processes improve with age and with school grade. Younger children score better than older ones in the same grade. New items are judged correctly more often than are old items. Various methods of scoring recognition data are considered. The difference between recall and recognition scores is explained in terms of "memory threshold." Depending on the distance of the retained item above the lower threshold of memory, it may be easily recalled, recalled with difficulty, easily recognized, recognized with difficulty, or not remembered in any way. There is no gap between recall and recognition scores, the threshold levels or distances constituting a continuum.

H. L. HOLLINGWORTH (Columbia)

33. JAENSCH, E. R. Ueber den Aufbau der Wahrnehmungswelt und ihre Struktur im Jugendalter. Zur Methodik experimenteller Untersuchungen an optischen Anschauungsbildern. *Zeits. f. Psychol.*, 1920, 85, 37-82. (Zeitschrift zum 70 Geburtstag von Prof. Dr. G. E. Müller.)

The author has apparently carried on an elaborate research in the last three years upon upwards of 100 subjects, adults and youths, who possess or are gifted with visual percept-images. The foregoing article is chiefly a diffuse defense of experiment in this field, declared by G. E. Müller and Stumpf to be *apsychonomic*. The best defense would seem to be actual experiments of which, however, only enough are given to whet one's appetite. The phenomenon of the identical line of regard (Hering's Gesetz der identischen Sehrichtung) is shown to prevail with percept-images even though the subjects had never before noted it in perception. (See pp. 40-42.) Similarly the stereoscopic illusion due to the so-called retinal incongruence (Hering) may be demonstrated

where one half of the figure is a percept and one half is a percept-image. It is to be noted, however, that while all subjects who succeeded in combining percept and image in this manner experienced the illusion, most subjects found such combination impossible. (See pp. 43-47.) Miscellaneous observations about the nature of percept-images are scattered throughout the article. Such is the statement (p. 53) that for many subjects, the percept-images are sufficiently vivid to conceal the background upon which they are projected, or the oft-repeated assertion that in virtually every psychological respect, the percept-image is intermediate between after-image and idea-image (*Vorstellung*).

Upon the basis of an unpublished somatic study by his brother. W. Jaensch, the author distinguishes two types of "Eidetiker" (persons gifted with percept-images). Psychologically, these two types seem to differ only in degree, the images of the T-type approaching more nearly the after-image, those of the B-type the idea-image, especially in respect to voluntary control and subjection to accidental, external influences. Somatically, they are said to differ more sharply. The T-constitution is "marked by galvanic and mechanical hyper-excitability of peripheral, especially of the motor nerves." The B-constitution presents a clinical picture not unlike the Basedow syndrome. Differences between the Marburg cases (Jaensch) and the Vienna cases of Urbantschitsch are ascribed to the prevalence in the latter city of Basedowoid types. In its extreme form, the B-type is so subject to accidental influences as to be really *apsychonomic*. This explains in large part why Urbantsch's cases (chiefly found in an ear clinic) yielded such irregular results.

Jaensch holds that percept-images are typical of a certain period (unspecified) in a child's life; their persistence in certain adults is a case of specialized infantilism. No evidence is presented for this view, but reference is made to previous articles (apparently in the *Zeitschrift*) by Kroh and Herwig. The whole article is organized as a defense of method; from any other standpoint it is very badly organized. The above abstract should suffice for all save the special student of this problem.

ENGLISH (Wellesley)

34. BYRD, H., A Case of Phenomenal Memorizing by a Feeble-minded Negro. *J. of Applied Psychol.*, 1920, 4, 202-206.

The case of a feeble-minded negro is described. He is chron-



ologically 24 years and mentally between 8 and 9. He has a rather short auditory memory span failing on five digits. He has committed to memory a large array of facts about dates, places and locomotive engine numbers. Given a date—month, year, and day of month—he will give day of week. He cannot go back of 1901 nor forward beyond 1924. Between these limits he never fails.

E. M. ACHILLES

35. OTIS, A. S., Do We Think in Words? *Psychol. Rev.*, 1920, 27, 399-419.

The behavioristic conception of thought as "subvocal talking" is not adequate to the facts. We may think in words but the materials of thought are by no means limited to words; visual, auditory, kinesthetic, and other imagery may play a part. Words are only one kind of symbolization. Thought may be concerned with judgments of color, size, weight, motion, acceleration, symmetry, etc. in which word symbols play little or no part.

YOUNG (Minnesota)

## 7. SOCIAL FUNCTIONS OF THE INDIVIDUAL

36. BARNES, H. E., A Psychological Interpretation of Modern Social Problems and of Contemporary History: A Survey of the Contributions of Gustave Le Bon to Social Psychology. *Amer. J. of Psychol.*, 1920, 31, 333-369.

The range of Le Bon's interests is so great that his work in any special field lacks thoroughness. Taking a few striking psychological postulates, he applies them to nearly every phase of contemporary life. His writings on social psychology are colored by an "anti-patriotic bias" and a "class bias." Yet he has pointed out tendencies, conditions, and psychological laws which had been previously overlooked.

(The greater part of the article consists of a critical and analytical review of eight of Le Bon's works on social psychology, namely: "Lois psychologiques de l'évolution des peuples" (1895); "La psychologie des foules" (1895); "La psychologie des socialisme" (1898); "La Psychologie politique et la défense sociale" (1910); "Les Opinions et les Croyances, genèse, évolution" (1911); "La Révolution française et la psychologie des révolutions" (1912); "Enseignements psychologiques de la guerre européenne" (1916); and "Premières conséquences de la guerre; transformation mentale

des peuples" (1917). There is appended a summary of his basic theories on social psychology.)

RICH (Pittsburgh)

37. ROGERS, A. K., Principles in Ethics. *Philos. Rev.*, 1920, 29, 511-529.

The origin and sanction of moral judgments is to be found in certain pre-rational elements of impulse and feeling. It is the fact of approval as an empirical expression of human nature that tells us why we ought to do certain things. "Unless we found ourselves . . . so constituted that some things are pronounced good by us and others not so good, no . . . guiding insight would be possible." That what men usually approve of and consciously strive after is pleasure, or self-realization, etc., is denied. Rather we strive to do things "that we find interesting and important." The self has its interests and attention directed to *things* rather than to feelings. In order to find what kind of work carries with it the moral approval we must turn to the facts of experience not to the realm of self-evident truths. And turning to experience we find that, since men are differently built, no rational principle in itself can possibly tell us what sort of life in the concrete man is suited to. It is the individual liking that must determine the personal ideal. In principle (and in *fact* at times) one must substitute considerations of purely objective value for the more personal appeal of this or that particular form of the good but normally this "impersonal calculation is subordinate to the ends chosen by our constitution." When a man finds an interest which is capable of gripping him and keeping him steadily and pleasantly at work he should accept it as his ideal and "other things are good in proportion as they lend themselves to the accomplishment of this main design, or at least do not actively impede it."

CAMPBELL (Wells)

38. LODGE, R. C., Reality and the Moral Judgment in Plato. *Philos. Rev.*, 1920, 29, 453-475.

This article shows, among other things, that Plato's writings contain much psychological insight. Courage, for Plato, is based upon what we now call the instinct of pugnacity. Temperance has its basis in a "certain innate disposition, a natural tendency toward quietness, orderliness, obedience to law, etc." Associated with this disposition are certain other tendencies of mind, *e.g.*,

evenness of temper, freedom from passion, etc. The virtue of justice is gradually developed from the instinct of gregariousness. All animals delight in motion but "to control the joyous abandon of animal motility, to re-shape it in terms of measure and rhythm, of harmony and balanced order, is specifically human, and is regarded by Plato as the basis of art in all its forms." Law arises as a natural reaction against forces which threaten the existence of the community. In the more primitive stages of social development it is almost wholly unreflective; but later becomes self-conscious. Man naturally reaches out after new experiences and these awaken in him the cognitive processes the activities of which result in immediate and instinctive satisfaction. This impulse to know is really based upon what we would now call the instinct of curiosity. In some it prompts to the task of working over and reorganizing the whole of human experience, in short to live the life which is the life of philosophy, the highest and most blessed possibility to man.

CAMPBELL (Wells)

39. PROCTER, T. H., The Motives of the Soldier. *Internat. J. of Ethics*, 1920, 31, 26-50.

The following three questions are asked and answered: what made men join up, what sustained them during the long war, what is the effect of war upon the soldier. Three classes of motives made him join. Those acting under the first joined because they wanted to. They obeyed one of the following simple impulses: love of fighting, love of romance (including adventure), hatred of the enemy, doing what others are doing. The second class of motives had reference to an "ought." Here the motive was conscious and intellectual, the action thought out. Under social compulsion and at a later date under conscription men joined, in most cases, because they were afraid not to. If it were possible to secure recruiting figures of the different months one would be able to show that the motives were present in the following order of frequency: fear, altruistic motives, humanitarianism, attraction.

Of the individual motives that sustained a man during the war the strongest was that accomplished through the merging of the individual into the general will. The personality of the army was substituted for that of the individual soldier. This was accomplished through the most rigid discipline; fear being the largest element in this. As lesser individual motives are mentioned

esprit de corps, instinctive anger which makes you want to shoot at the fellow that is trying to pot you, all that is included in the word comradeship. Of the over-individual motives belief in the cause and the emotion of hatred are the essential ones.

Of the effects of the war the following are discussed: loss of idealism, general feeling of disillusionment, the loss of the temporary army virtues such as punctuality, neatness, cleanliness, fusion of social classes. The soldier is said to be drained emotionally, to have more or less lost his capacity to feel. He is however more responsive to mass impulses. He has continued the habit, gained in the army, of not forming independent judgments. He has come to regard life more cheaply and values higher the pleasures of the senses. War may be necessary, but it is evil.

CAMPBELL (Wells)

40. DAVIES, G. R., Progress and the Constructive Instincts. *Amer. J. of Sociol.* 1920, 26, 213-223.

Every conspicuous advance of civilization is a consequence of instinctive energies thrown into new channels by increasing mentality, of constructive instinct radiating into invention and managerial ability. When a dynamic advance of society is nascent, men of superior natural ability in the groups affected are developed to give direction to the movement. Some of these are leaders in things intellectual and idealistic, but the substantial work is done by economic leaders. A primary condition upon which the organic relationships of society depend is the wide natural diversity and inequality of human nature. The functional society, ruled by a spirit of intelligent enterprise tends to become by a cyclical aging process a stratified static society, in which property is hereditarily concentrated, the common spirit of endeavor is displaced by group feeling, and energies are wasted in strife. Socialistic experiments have never made a successful appeal to the constructive instincts, but these instincts may be stimulated by a clarifying of the moral perspective and by a fostering regard for science.

HART (Iowa)

41. MORGAN, J. J. B., Why Men Strike. *Amer. J. of Sociol.*, 1920, 26, 207-211.

Men strike because of the fact that the work of modern tradesmen, craftsmen and laborers is so specialized, so devoid of intrinsic interest that the workman finds no incentive to work except the

pay he receives. Laziness is an abnormality resulting from the conflict between desires to act in unconventional ways and fear of the results coupled with a distaste for conventional activity. The only permanent remedy for industrial unrest is to make work interesting for all classes, by introducing variation in each man's job, by showing him the relationship between his task and the project as a whole, and by opening up before him a possible route for promotion.

HART (Iowa)

42. GRIFFITHS, J., Give the Boy a Chance. *Training Sch. Bull.*, 1920, 17, 100-104.

This is a story of a boy who came before the court three times. The judge knew his record; he was 13 years old, but mentally 9. Wishing to "give the boy a chance" he would not place him in an institution. Nine years later he had no job and had lost an arm in industry. He was charged with deserting his wife, age 19, and a two-week-old child. The judge then saw that the real chance for the boy would have been in an institution where he would have been training to do what he was able to do.

E. MULHALL ACHILLES

43. JONES, C. T., Wyoming State School for Defectives. *Training Sch. Bull.*, 1920, 17, 134-135.

The aim of training is to prepare the border-line cases who are not psychopathic for return to the community under an adequate parole system. Research is being conducted. Teachers who desire to prepare for work along this line may spend as long a period as is necessary at the school to learn to give mental tests and to get practical experience in teaching defectives. Room and board are furnished and there is no tuition.

E. MULHALL ACHILLES

44. THE TRAINING SCHOOL (VINELAND) RESEARCH DEPARTMENT. *Training Sch. Bull.*, 1920, 17, 84-87.

The research dates from 1906; its annual cost is about \$10,000. The present personnel consists of a director, assistant, librarian, and a stenographer. There are several research students who are voluntary workers. The general scope of the work has been problems of (1) recognition, (2) the causation, (3) prevention of mental defects.

E. MULHALL ACHILLES



45. LINK, H., A New Application of Psychology to Industry.  
*J. of Applied Psychol.*, 1920, 4, 245-249.

This experiment suggests certain broad potentialities of industrial psychology. The problem of setting rates is a universal problem and it is one of the most trouble making questions with which industries have to deal. Psychological method could supplement the time-study method. The experiment reported here was conducted in a sporting goods factory.

E. MULHALL ACHILLES

46. LINK, H. C., The Applications of Psychology to Industry.  
*Psychol. Bull.*, 1920, 17, 335-346.

Psychology as applied to industry is on the defensive, partly because industry has expected quick and concrete returns which the sometimes over-confident psychologists have not been able to produce. Some of the most significant applications of psychology to industry have been achieved by men who are not professional psychologists. The most promising new phase is the establishment of departments of psychology in many schools of business administration and other technical schools.

In reviewing the literature, the author calls attention to Brierly's warning against the tendency of psychologists to let the practical demands of industry dominate their outlook, so that the personality of the men and the human side of the situation be dimmed in comparison. In this connection he praises the articles of Tead, Marat, Southard and Carleton Parker.

A fruitful field practically untouched by industrial psychologists, is that of arousing *interest* in the work. Wolf makes a valuable contribution here, reporting an experiment in which graphic charts, describing elements in their tasks so aroused interest in workers that the output was greatly increased. Kitson's article also argues for this extension of information to create interest.

In discussing the large literature dealing with the application of psychology to *employment* the author shows that he feels that more job analysis is needed. He says the use of a standard *clerical test* assumes the existence of a general clerical ability. Where job specifications for clerical work have been made it generally turns out to involve a wide range of work, requiring many special abilities rather than a general one.

Discussing *rating scales*, Link suggests that they should rather be called "opinion records." He appreciates the constant error

in such judgments which Thorndike has named the "aura" of general merit. He feels that important questions for both psychological technique and for industrial management are raised by Shelton's unique rating method, which uses secret ballots cast by the men as well as the managers.

The author apparently agrees with Spaith, that the psychological studies of *fatigue* have so far been barren. He quotes with approval Watson's assertion that the division of work into mental and physical has brought the psychology of fatigue to an *impasse*. He feels that a genuine though non-psychological contribution to the subject of fatigue has been made by the Gilbreths, who are interested in eliminating useless movements.

These investigators, too, have made the most important contribution to the problem of *rate setting*. In this field, Link opens up numbers of interesting and very practical problems which might well engage the industrial psychologist.

A new German periodical, *Practische Psychologie*, devotes its first two numbers to the description of new apparatus designed to examine machine tool apprentices. The enthusiasm expressed by German writers indicates a strong vocational trend. An exception appears in the article of Tramm which describes the training of street car motormen according to the methods of applied psychology.

Deploring the mass of *pot-boiling* material which is being turned out by the pseudo-scientific writers, Link is inclined to blame psychologists partly for its appearance. The applied psychologist has felt constrained to meet the greedy demand for something definite, understandable and applicable, and has been intrigued into attempting to popularize and apply before his materials and results were ready for such treatment.

This stimulating article (which reviews 48 titles) closes with an appreciation of Watson's contribution.

Woods

47. JOHNSTONE, E. R., On Institutional Management. *Training Sch. Bull.*, 1920, 17, 89-92.

The first requirement for the successful administration is confidence. One way of obtaining the parents' confidence is by letting the children take their relatives around the institution.

E. MULHALL ACHILLES

48. JOHNSTONE, E. R., On Institutional Management. *Training Sch. Bull.*, 1920, 17, 125-129.

Most institutions have many "groups" and it is rare not to find one where a new child may live in comfort and happiness. Long experience enables the officers to make assignments successfully but reclassification may be necessary. To keep him in an environment suited to him is to develop a child's social life. To fully understand this group system and its benefits one must visit a good institution and go about seeing the poverty of life and opportunity that has made a spiritual pauper of the child who has just entered and then, as you read the history of those who have grown up in a world devoted to their interests and see them performing their tasks with happiness and results, you may realize that they have found their "kingdom of earth."

E. MULHALL ACHILLES

49. ROBINSON, E. S., The Compensatory Function of Make-Believe Play. *Psychol. Rev.*, 1920, 27, 429-439.

The child's behavior is determined by inherited and acquired impulses of which some are adequately expressed while others are blocked—either by environmental factors (extra-organic) or by an internal conflict (intra-organic). The incomplete adjustments of childhood are compensated for by "make-believe" play. The child would like to fight or hunt but since he is not able he pretends. "Make-believe" is also seen in the fantasy of adults and its compensatory function is the same as in the overt "make-believe" play of children.

YOUNG (Minnesota)

50. JOHNSTONE, E. R., On Institutional Management. *Training School. Bull.*, 1920, 17, 120-124.

Showing appreciation for the good work an employee does is a policy at Vineland (N. J.). The head of a department takes time to talk over the work with each new employee. Every month or two a meeting of the entire staff is called. Each employee may learn from such a meeting the part he plays in protecting the wards of the institution from society. A Bulletin Board is also a source of information and encouragement. Reports are made in diary form. The diary is returned daily or weekly with comments by the reader. No comments are made on things of which the reader does not approve. Another plan is to have the superintendent's

secretary go from place to place and see individual children, talk over their improvement with the teacher, farmer, etc. This becomes part of the written report on the child.

Institutional birthdays are observed. When one is there one, two, etc., years he observes the anniversary of his coming. "Birthday" greetings are sent and the employee enjoys doing something for a child who has a real birthday on the institutional birthday. After two years service an employee is eligible for the Diploma for Institutional Efficiency. His qualifications are considered by the superintendent and department heads—loyalty and diligence are among the qualities considered.

E. MLUHALL ACHILLES

51. JARRET, M. C., The mental hygiene of industry. *Ment. Hyg.*, 4, 1920, 867-884.

This article points out the practical value of the mental hygiene movement in industry; cites several instances where a psychiatric social worker would have been of great service both to employer and employee; gives the opinions of physicians and employment managers regarding the importance of mental factors in industrial organizations and reviews three papers written by Dr. Southard on the problem in general.

WHEELER (Oregon)

## 8. SPECIAL MENTAL CONDITIONS

52. ELIOT, T. D., A Psychoanalytic Interpretation of Group Formation and Behavior. *Amer. J. of Sociol.*, 1920, 26, 333-352.

The points in this paper are simply applications of some of the new concepts in psychology in a way which makes psychology a helpmeet of social science. The social disapproval and disadvantage imposed upon the free expression of greed or self-interest have led to the camouflage of motives which are basically economic. The subconscious holds in leash the real wish which gets its fulfillment or compensation by justifying itself in the name of social welfare, patriotism, revenge, culture, religion, rescue, necessity, or self-defense. Whenever an environment is such as to stimulate a similar set of behavior mechanisms with similar affects in a considerable number of people, group formation has its natural soil. While the ostensible purpose of a group is obvious, its growth may

have been fostered by those who consciously, subconsciously or unconsciously are using its collective strength for very different ends, personal or factional. A group may be roughly likened to a magnetic field, polarized around the major purpose of the organization. A well-organized minority in a group gains a majority by more or less skilful appeal to the interests of the bulk of the group. When two groups have a grievance or conscious thwart in common, they will make common cause in their immediate activity. When two groups both have wishes, and their fulfilment is mutually exclusive, both are thwarted acutely and there is war. Intimidation can only prevent rebellion or secession by making the instinct of self-preservation dominant over all thwarted desires. Justice, on the other hand, is the harmonization of wishes and of wish-fulfilment. Reason is secondary to wish-fulfilment. Thought points out to group leaders ways in which the unfulfilled or thwarted wishes of the given group can be fulfilled, if possible without thwarting the activities or desires of any other powerful group. Goods and services will satisfy most wishes, and many wishes can be satisfied in no other way, but all theories, including economic theory, are based ultimately upon the wishes themselves.

HART (Iowa)

53. PRUETTE, L. , A Psycho-Analytical Study of Edgar Allen Poe. *Amer. J. of Psychol.*, 1920, 31, 370-402.

The history of Poe's family shows a decided neuropathic inheritance. After the death of his actor-parents, he was brought up by a Virginia planter and his wife. These foster parents never understood or sympathized with the highly sensitive and excitable child and, although his boyhood was passed as the spoiled son of indulgent parents, he never received the parental affection or family sympathy that he craved. Taunted by aristocratic schoolmates with his humble origin, Poe became imbued with an intense desire for superiority, a "will to power." As is usual in an only child, he was a poor competitor in the struggle for existence, spending his life in poverty, was unable to make or hold many friends, and could not tolerate the idea that there was any being superior to himself. His love-life was a series of disappointments. At the age of twenty-three he had lost by death his mother, his foster-mother, and an elderly lady to whom he had attached himself with filial devotion, and had parted from three sweethearts. His wife proved to be an invalid whose critical illnesses put him repeatedly during six



years through all the agonies of losing her. Little wonder, then, that he wrote of the death of beautiful women.

The poetry of Poe represents two things, a very considerable degree of introversion and a flight from reality. His themes are few, resulting from a complete absorption in a few dominant ideas. The poems are songs of sorrow in which he constantly manifests the desire to flee from the imperfections of the world, and his heroes are largely autobiographical.

In his stories, as in his poems, Poe continually links death with sex. The great majority of the tales contain one or more deaths. The colors which are symbolic of death and sex, black and red, appear again and again. Connected also with sex is the sadistic impulse. Thwarted on the sexual side of his nature, he embodies the repressed desires in poems and tales. All through his life two things are found together: his will to power, thwarted, demanding sadistic revenge, his sadism gratifying and reinforcing his will to power. While not so strikingly general, a masochistic tendency is extremely well displayed in a few stories. Indeed, his stories of ratiocination represent the delight of a mind that loved to torture itself.

While proof that Poe was definitely syphilitic is lacking, he displayed the same diathesis as many men of genius said to have been syphilitic—the dying out of the phyletic tendencies and the dominance of the egoistic ones.

RICH (Pittsburgh)

54. SCHROEDER, T., Conservatism, Liberalisms and Radicalisms. *Psychoanalytic Rev.*, 1920, 7, 376-384.

Since all institutions and creeds are but the expression of human desire, the evolution of the latter is, for the psychologist, more important than any particular objective change in the social, industrial, or political order. This evolution is towards a greater democrization of desire. It proceeds from a desire for exploitation and its aristocratic privileges to a desire for human welfare. From the psychological standpoint conservatism, liberalism and radicalism are not merely creeds and forms of conduct but are mental attitudes—stages in the above evolutionary process.

Feudalism must be understood from the psychological viewpoint of feudal-mindedness. This mental attitude has two stages of development. In the first stage the laborer is regarded as an insensate being belonging to the land like the crops and trees, and

in the second stage (the stage of chattel slavery) he is regarded as a domestic animal which as such must be accorded animal rights. He should, and in the course of evolution will, be regarded as a human being whose welfare must be considered. Both stages of feudal-mindedness are however represented in our present social order.

Subscription to a conservative, liberal, or radical creed, or activity in a cause is no evidence of conservatism, liberalism or radicalism as psychologically understood. We must know the *why* and *how* behind the creedal declaration. The same creed may be accepted by individuals at very different levels in the evolution of desire. Thus, many feudal-minded individuals are found in the ranks of the so-called radicals, driven thereto by mental conflict or instinctive impulse (fear, greed, self-assertion). The acquisition of power reveals the fundamental autocracy of such feudal-minded radicals. A real mature radicalism, as opposed to this infantile type, is reflective rather than emotional, and proceeds by education rather than by violence. The main task of such education is to accelerate the democritization of our mental attitude towards other human beings and towards our use of political institutions, economic might, and legal formalities.

BRIDGES (Ohio State)

55. BOWMAN, K. M., Analysis of a case of War Neurosis. *Psychoanalytic Rev.*, 1920, 7, 317-332.

The patient described was admitted to Maghull Red Cross Hospital, England, in August, 1918, as a case of "War Neurosis." He was suffering from the following mental symptoms: (1) depression and worry, (2) insomnia and unpleasant dreams, (3) impulse to kill the nurse who had attended him in a recent mastoid operation and fear that he would do so, (4) exaggerated fear of death.

The analysis began with the last two symptoms. These gradually disappeared when it was explained to the patient that his homicidal obsession originated in repressed anger aroused by the nurse's cruel or inconsiderate treatment of him, and that his thanatophobia was due to the unusual prominence of death in his past experience. All his relatives had died of tuberculosis. The analysis revealed the following additional symptoms: (1) worry over loss of affection for his wife, and (2) hallucinations in which he saw a former sweetheart and sometimes heard her speak. Further analysis brought to light the fact that his wife would not permit

sex relations through fear of pregnancy. The complete recovery of the patient ensued upon the attainment of a more normal sexual adjustment. His former marital affection returned, his hallucinations disappeared, and his depression ceased.

The writer calls attention to the fact that, although a war neurosis, this case like many others of the kind had its real foundation in civil life. He also emphasizes the importance of a superficial analysis in securing relief from, or decrease of symptoms.

BRIDGES (Ohio State)

56. FAY, D. W., The Case of Jack. *Psychoanalytic Rev.*, 1920, 7, 333-351.

"A sensitive, overconscientious boy begins at puberty to worry over his inability to resist masturbation, believes it is a sign of weakmindedness, that other people can see in his face that he practises it, and consequently look down on him, and he begins to withdraw from social contacts and to day-dream. As a result he does poorly at school and at work. In adolescence he falls in love, but his sense of inferiority causes him to withdraw in the face of a rival. He joins the navy. He contracts gonorrhea and considers himself hopelessly ruined and disgraced, and that he will never have the right to marry his girl or any other girl. He worries and worries. The fear of death from submarines aggravates his condition. Finally he believes people consider him a passive homosexual pervert, and he is sent to hospital, labeled: dementia precox, unfavorable for full recovery.

"There he is retarded and negativistic, remorseful, and worrying over his sins. After much difficulty he is induced to confess them. The analyst belittles them and holds out hope for the future. Gradually he emerges from the psychosis and becomes free from delusions and hallucinations. Through psychoanalytic aid he gets full insight into his condition and understands the endogenous origin of all his former delusions. His recovery appears to be complete."

Points of special interest in this paper are: (1) the apparent origin of the psychosis in conflict between socially tabooed sexual trends and a perhaps too puritanical conception of cultural morality, (2) the psychotic fantasies which are veritable myth constructions based quite obviously upon Oedipus and homosexual complexes, (3) the excellent illustration of projection in the hallucinations and of sublimation in the religious behavior, (4) the writers therapeutic

method which is a psychological reëducation rather than a psychoanalysis in the narrow sense, (5) the apparent recovery of a case of dementia precox as a result of this method.

BRIDGES (Ohio State)

57. FAY, D. W., The case of Jim. *Psychoanalytic Rev.*, 1920, 7, 352-365.

This paper presents another case of dementia precox and recovery through psychoanalysis. The etiology and mental mechanisms illustrated are similar to those described in "The Case of Jack"; and, although Jim is even more schizophrenic and introverted than Jack, a similar happy outcome is attained by a similar method.

The writer summarizes his paper as follows:

"A sexually precocious boy extremely fond of his mother makes incestuous attempts on her and his little sister. The sister incest haunts his life with bitter remorse. In adolescence he is bashful, retiring and lazy, much given to dreaming of easy money and sex fantasies. On board ship in the navy a psychosis develops. To his remorse is added the idea of fellatio. While his ship is at New York a fellow sailor's family take him to their home and he falls in love with the daughter, but feels utterly unworthy and tries to kill himself. He is put in a hospital, dramatizes his conflict as a contest between God and the devil, each trying to win him, and is sure the devil has gotten control of him forever, and that he is doomed to eternal punishment. His power is gone. With psychoanalytic aid he makes a rapid recovery, his potency returns, he goes home, and is now living a happy and busy life."

BRIDGES (Ohio State)

58. SLOSSEN, E. E., Jonathan Edwards as a Freudian. *Science*, 1920, 52, 609.

RICH (Pittsburgh)

59. McDougall, W., Presidential Address. *Proc. of the Soc. for Psychical Res.*, 1920, 80, 105-121.

Dr. McDougall, in addressing the General Meeting of the Society, July, 1920, apologizes for the lack of support given the Society by psychologists feeling that, of all the men of science, they should be first to coöperate with them. He excuses his colleagues for this seeming disinterest by explaining that they are

afraid to affiliate themselves lest the public seize the opportunity to misinterpret this interest as an outburst of witchcraft, superstition, etc. Psychologists, feeling a great responsibility for their reputations are afraid of doing their Science an injury. He states that he believes telepathy is nearly established for all times and when it actually is, its importance for Science and Philosophy will outweigh the achievements of all the psychological laboratories. He refers to his book "Body and Mind" to which he is adding another chapter, since, following its publication he has been greatly concerned with cases of nervous disorder, which have been widely held to make untenable the conception of the unitary ego which the argument of his book has pointed. He discusses this at length and uses his position as executive, with those of his subordinates, as concrete examples. Dr. McDougall speaks of the apparent dependence of memory on the integrity of the brain and refers to the effects upon sense perceptions produced by the destruction of certain parts of the sensory cortex of the brain as recently brought to light by Dr. Henry Mead. He closes his address by bringing the attention of his audience to three great questions, in which he is very much engrossed, as a guide to research.

BROOKE (Pennsylvania)

60. VAN LOON, F. H. and WEINBERG, A. A., A Method of Investigation into Thought-Transference. *J. of the Soc., for Psychical Res.*, 1920, 20, 4-23.

Discusses a method of investigation into thought-transference and involves a scheme to be followed in making further researches along these lines. A detailed report is appended.

BROOKE (Pennsylvania)

61. WALES, H., Case. *Proc. of the Soc. for Psychical Res.* 1920, 80, 124-218.

A report on a series of cases of apparent thought transference without conscious agency. Part I involves cases in which the aggregate seems to exclude chance-coincidence while Part II discusses some cases which, assuming a telepathic connection, seem worth examining as throwing light on its nature.

BROOKE (Pennsylvania)



62. ANON., Case. *J. of the Soc. for Psychical Res.*, 1920, 19, 262-267.

Report on an apparition seen twice after death by two independent witnesses.

BROOKE (Pennsylvania)

63. RAMSDEN, H., Case. *Jour. of the Soc. for Psychical Res.*, 1920, 19, 241-248.

Report of a case involving experiments in Automatism obtained by a group of experimenters, members of the Norwegian Society for Psychical Research.

BROOKE (Pennsylvania)

64. McDougall, W., Case. *J. of the Soc. for Psychical Res.*, 1920, 19, 269-274.

Report of three dreams giving evidence of knowledge supernormally acquired, the dreamer having recently been a member of Dr. McDougall's classes in Psychology at Oxford.

BROOKE (Pennsylvania)

65. *Journal of the American Society for Psychical Research*, 1920, 14, 425-476, 477-528.

The numbers are devoted to memorials to James Hervey Hyslop late Secretary of the American Society for Psychical Research. They contain a Biographical and Sketch by Walter F. Prince, also Historical Sketches and Testimonials by George H. Hyslop M.D., Professor William Romaine Newbold, Dr. Max Dessoir, Professor Camille Flammarion, Professor John E. Coover, Professor H. N. Gardiner and others.

BROOKE (Pennsylvania)

70. WOOLBERT, C. H., A Behavioristic Account of Sleep. *Psychol. Rev.*, 1920, 27, 420-428.

For the behaviorist consciousness is "a matter of degrees of complexity and ordination among systems of muscular action." Hence an explanation of sleep must be in neuro-muscular terms. The muscular coördinations of the body are arranged in an hierarchy of fairly well-defined systems. The most fundamental, both genetically and functionally, are those reflex systems controlling heart-beat, flow of blood, and other vital functions. At the top of the

hierarchy are the systems relating to speech, involving muscles of the jaws, lips, tongue and throat. The difference between waking and sleeping is to be found in the operation of this hierarchy. Sleep occurs when the lower systems dominate the higher.

YOUNG (Minnesota)

71. MILES, GEORGE W., Mental Mechanisms. *Ment. Hyg.*, 4, 1920, 940-949.

Here the author describes in his own language the well-known mechanisms of the Freudian psychology. He begins with "affectivity" as the "mental cement" that holds our various mental functions together, which functions are likened, in their organization, to the stones and bricks which make up a building, the buildings in turn forming a town or city. Then in turn are defined repressions, conflicts, complexes, censorship, symbols, displacement, conversion, substitution, dissociation, the conscious and the unconscious, wish fulfilment, the various dream mechanisms, paranoid mechanisms, protective or defensive mechanisms, fixation mechanisms, regressive mechanisms and the like. While the author claims nothing original in this paper, his purpose was to aid in definitizing if not in standardizing nomenclature, which is being so widely used that the terms do not always mean the same thing when employed by different persons.

WHEELER (Oregon)

## 9. NERVOUS AND MENTAL DISORDERS

72. CLARK, L. P., A Clinical Study of Some Mental Contents in Epileptic Attacks. *Psychoanalytic Rev.*, 1920, 7, 366-375.

A study of epileptics' oral automatisms and responses to questions during *petit mal* attacks suggests that these attacks may originate in mental conflict. It is well known that the epileptic is morbidly sensitive and intensely egoistic and sexual. An attack is often precipitated by a rebuff to one of these intense fundamental trends, and the mental content revealed in the attack is often a relatively crude expression of his egoism and sexuality. The repression of such trends may not be causative of the disorder itself, but at any rate the attack allows these inhibited forces to express themselves. A careful study of the mental content thus revealed leads to a better understanding of the epileptic as an individual and to a better method of individual treatment through reëducation

and sublimation. The writer presents several examples illustrative of his statements.

BRIDGES (Ohio State)

73. ROSANOFF, A. J., A Theory of Personality Based Mainly on Psychiatric Experience. *Psychol. Bull.*, 1920, 17, 281-299.

Abnormal personality types are listed as (1) antisocial, (2) cyclothymic, (3) autistic, (4) epileptic personalities, and each is described. Kraepelin's description is quoted in differentiating the four varieties of cyclothymic personality, *i.e.*, (a) manic make up, (b) depressive make up, (c) irascible make up, and (d) emotional instability.

All of these traits may be found in normal individuals, and especially in children, the differentiation between normal and abnormal manifestations being quantitative, rather than qualitative. Among the traits qualitatively distinguishing normal personality are to be mentioned inhibition, emotional control, a superior durability of mind, rational balance, and nervous stability.

Mixed rather than pure types are the rule, and every different personality trait is subject to quantitative variations and may appear in many combinations.

There is a tendency to evaluate normal personality very high, probably largely because abnormal personalities have secured attention through misdemeanors and marked social maladjustment. A good case, however, may be made out for the usefulness of certain "abnormal" traits. Doubtless much achievement is traceable to anti-social tendencies and much "literary and histrionic art to the sensitiveness and power of expression of cyclothymic personality."

Abnormal personalities types, though often of dissimilar quality, tend so strongly to appear in family groups, that physicians have tended to group their different manifestations together under the term "neuropathic constitution," and many are inclined to the theory that this "constitution" is heritable according to Mendelian law, as a recessive character.

The author is inclined to doubt that such a vast number of different neuropathic manifestations can constitute a unit character, and proposes rather that a "degree of inhibition of such manifestations, which is desirable for social environments, and which is a much more limited affair, probably constitutes, if not a single Mendelian unit, a homogeneous group of such units." He pro-

poses using Bateson's terms "epistatic" and "hypostatic," the "implication being, that certain hereditary factors, while determining certain clinical manifestations, have at the same time the effect of inhibiting the manifestation of other factors which are also present."

General intelligence does not seem to vary qualitatively, but does vary quantitatively in relation to temperamental makeups. For example, epileptic, dementia praecox and manic-depressive cases examined with intelligence tests showed distinct increase in amount of intelligence, in the order named.

Sexuality, too, bears a distinct relation to certain personality types. Clinical experience associates general eroticism, sadism, masochism, and fetichism with epilepsy; inversious with schizophrenia; and frigidity with hysteria. Manic depressive psychoses are more common and dementia praecox slightly less common in woman than in men.

The author stresses the importance of careful, detailed, long continued analyses of personality and would have these consider not only the data of direct investigation of the subject, but also the data of heredity, ontogenetic data, pharmacologic data, the data of organic pathology and of senile involution. A bibliography of 37 titles enriches this valuable paper.

Woods

74. MENZIES, W. F., Mechanism of Involutionary Melancholia. *J. of Mental Sci.*, 1920, 66, 355-414.

The presidential address of the Medico-Psychological Association of Great Britain and Ireland, July, 1920. In this address Dr. Menzies discusses the two processes of involutionary melancholia, involution and depression. He takes up briefly the relation of enterostasis to depression: the importance, development, divisions and functioning of the two parts (autonomic and sympathetic) of the involuntary nervous system: the physiology of emotion: the infracortical conducting paths: the state of depression: the exaltive emotion. He discusses atheroma and anoxaemia: the posture in melancholia: the functions of the cerebral cortex liable to be disturbed in "involutionary melancholia": the cortex in disease. He states that in response to the suboxidation caused by bacterial fermentation and enterostasis a sympatheticotonus occurs, the sensori-motor resultant of which is depressive emotion. Involution, he says, is a march of gradually increasing cytolysis dependent to an appreciable extent upon the power of reaction of the

hepatic antitoxin to the intestinal toxins, the penalty of failure being defective oxidation. He warns against the substitution of easily understood psychological explanations of disease for the more intricate and complex physiological and chemical explanations. He makes a plea for the physiological and chemical tests and for more carefully kept clinic records to assist the physiologist and biochemist in their work.

LEAMING (Pennsylvania)

75. MATSUMOTO, T., Study of the Relation between the Reproductive Organs and Dementia Praecox. *J. of Mental Sci.*, 1920, 66, 414-422.

This is the report of a study made by Matsumoto of Chiba, Japan, under the direction and supervision of Sir Frederick W. Mott. Dr. Matsumoto describes the normal histology of the testis from birth to old age, illustrating by cases. He then takes up the histology of the testis in idiocy, imbecility, general paralysis of the insane, manic-depressive insanity, dementia praecox, senile dementia and general hospital cases. He discusses regression and concludes that the regressive atrophy found in dementia praecox is primary in origin and not due to the diseases to which cases of dementia praecox so frequently succumb, viz., tuberculosis and dysentery. He further states that neither organic dementia nor extensive brain destruction produces regressive atrophy of the testis and it cannot therefore be secondary to brain lesion. He concludes by remarking that the interrelation of the endocrine organs and the organs of reproduction in dementia praecox is a subject worthy of intensive study from a combined histological, micro-chemical, and chemical point of view.

LEAMING (Pennsylvania)

76. WHITE, E., Abstract of a Report on the Mental Division of the Welsh Metropolitan War Hospital, Whitechurch, Cardiff, September, 1917-September, 1919. *J. of Mental Sci.*, 1920, 66, 438-449.

This is a report on the 1,773 cases admitted during the period covered by the report. Major White discusses briefly the causation, forms of mental disorder, treatment and final disposal in these cases. He gives fifteen brief case histories illustrating the different forms of mental disorder. He remarks that there is no proof that exhaustion per se will produce any of the psychoses. He states



also that the State, which is largely dependent for its welfare on the fitness of its manhood and has to provide directly or indirectly for the maintenance of the unfit, would do well to consider more seriously the problem of the mentally unfit both individually and progenically. He says that the war has shown us that with far earlier treatment more can be done towards recovery.

LEAMING (Pennsylvania)

77. EAST, W. N., Some Cases of Mental Disorder and Defect Seen in the Criminal Courts. *J. of Mental Sci.*, 1920, 66, 422-438.

This is a report on some of the most interesting cases out of a group of 141 prisoners held under observation in the Liverpool Prison for a suspicion of mental defect or disorder. In this report Dr. East states that the accurate diagnosis of the state of mind of the prisoner under mental observation forms one of the most important, responsible and exacting duties of the prison medical officer. Dr. East takes up insanity, mental deficiency and mental disorder not amounting to insanity. He illustrates each group with several case histories and discusses them from the viewpoint of the medico-legal witness.

LEAMING (Pennsylvania)

78. HOUSE, W., On Occultism and Insanity. *J. Amer. Med. Ass.*, 1920, 75, 779-781.

We are on the advance stages of a rising tidal wave of occultism and mysticism; the "psychic wave" of the lay press. History abounds with examples of similar waves. Occultism, pernicious as it is, can not be successfully combated openly and directly. We can only wait patiently for the wave to recede, and in the meantime we must minister to its victims whose latent tendencies it has excited into mental break downs.

SYLVESTER (Drake)

79. SPAULDING, E. R., Imbalance in the Development of the Personality as a Cause of Mental Ill Health. *Ment. Hyg.*, 1920, 4, 897-910.

The author asks for a closer watch over the personality development in children than is being manifested at present. The physical health of children is being cared for more and more and closer attention is being paid to outstanding mental defects. The proper

balance in personality may be ascertained in numerous ways: (1) in the physical makeup of the individual; (2) in the relation between physical and mental growth; (3) the individual's methods of expressing his energy; (4) by studying opposing characterological traits—aggressive versus passive instinctive tendencies, masculine versus feminine traits, concentration versus distractibility, deliberation versus impetuosity, etc. We should utilize not only the knowledge of psychologists and psychiatrists but the philosophy of poets and philosophers.

WHEELER (Oregon)

#### 10. INDIVIDUAL, RACIAL AND SOCIAL PSYCHOLOGY

80. BOWERS, P. E., Treatment of Criminals. *J. of Delinq.*, 1920, 5, 143-159.

This paper shows that the history of the treatment of criminals bears a striking resemblance to that of the insane. In 1793 Pinel proved the insane to be sick individuals and not the body of evil spirits or the objects of wrath of an angry God. As late as 1797, two hundred and twenty-two different crimes were punishable by death. The beginning of the reformatory treatment of criminals is credited to Pope Clement XI in 1704 and to John Howard in England. Crime is a symptom of a body politic and is the result of social and individual degeneracy. Psychopathic laboratories are showing the significant part that mental deficiency plays in crime with eugenics as a remedial agency through restriction, segregation, and asexualization of the criminal. The criminal should be examined and the case diagnosed in the laboratory before he comes before the court; all prisons and reformatories should maintain psychopathic laboratories supplemented by recreational facilities, the parole system and the indeterminate sentence. Prisons should "become moral, orthopedic institutes for the physical, mental and ethical rehabilitation of criminal man."

BALDWIN (Iowa)

81. CLARK, W. W., Success Record of Delinquent Boys in Relation to Intelligence. *J. of Delinq.*, 1920, 5, 174-182.

This investigation aims to determine the extent to which intelligence and social or vocational achievement are correlated by means of the intelligence ratings and "success records" of 301 boys from the Whittier State School. The criteria for success records are,

"Doing well, doing fairly well, doing poorly;" the I.Q.'s range from 47 to 122. The coefficients of correlation given between success records and intelligence levels by occupational groups show a success record for the whole group, with an intelligence rating of  $+ .19$ , with a range of  $+ .74$  in the agricultural group and  $- .51$  in the case of those engaged in transportation. "Intelligence is one of the important factors and should be considered in social diagnosis, with due consideration of supplementary data."

BALDWIN (Iowa)

82. FERNALD, W. E., An Out-patient Clinic in Connection with a State Institution for the Feeble-minded. *Ment. Hyg.*, 1920, 4, 848-856.

Here are discussed the advantages to the community of an out-patient clinic in connection with a school for the feeble-minded, the methods pursued in the Waverly Clinic, and a few typical cases from the 377 which were handled at that clinic during the year 1919. Few of these cases had ever been under adequate medical care, several had caused disciplinary trouble in the schools, and numerous cases revealed problems of mental adjustment and adaptation the early attention to which not only adds rich material to the field of preventive medicine but renders a real service to mankind.

WHEELER (Oregon)

83. WATSON, J. B. and LASHLEY, K. S., A Consensus of Medical Opinion upon Questions Relating to Sex Education and Venereal Disease Campaigns. *Ment. Hyg.*, 4, 1920, 769-847.

The authors have compiled the results of an extended questionnaire sent to various physicians over the country as an outgrowth of a grant given by the U. S. Interdepartmental Social Hygiene Board. Replies were received from about 70 physicians. The questionnaire contained questions relating to education by means of films and included such topics as the sex instruction of adults, information which should be supplied to persons contemplating marriage, frequency of maladjustments due to ignorance of sex matters, methods in treating or preventing sexual maladjustments, the causes of illicit sexual acts, instruction before maturity (amount, time, etc., of instruction and the desirable teacher), public instruction concerning venereal diseases by means of films and the like. It was pointed out that in devising educational films the consensus of medical opinion should be taken into consideration rather than

individual opinions. While in the main education by means of films meets with medical approval opinions differ with respect to certain details which should be emphasized.

WHEELER (Oregon)

84. STRECKER, E. A., Physical Factors in Mental Retardation. *J. Amer. Med. Ass.*, 1920, 75, 659-661.

A backward child's future should never be decided by a psychometric test alone. Congenital mental deficiency was found to exist in only 14 of 32 children, who would have been labeled as feeble-minded, according to psychological tests. In 15 of the 32, the mental retardation depended on physical factors. Of these, 6 were congenital syphilis; 1 was tonsil disease and heart; 1 rachitis; 1 angular gyrus lesion; 1 hypo-pituitarism and 5 were undernourished and underdeveloped as a result of economic and environmental conditions. The writer believes that 11 of the 15 will eventually gain a normal level. Every mentally retarded child should be given neurological, psychiatric and psychometric tests and examinations.

SYLVESTER (Drake)

85. POWERS, M. J., The Industrial Cost of the Psychopathic Employee. *Ment. Hyg.*, 4, 1920, 932-939.

Attacking the problem from the point of view of the financial cost of the psychopathic employee, the author points out the need for a more widespread and serious study of this source of waste in industry. The public in general and employers in particular must be educated in the understanding of human nature from the psychiatric viewpoint.

WHEELER (Oregon)

86. HAINES, T. H., The mental hygiene requirements of a community. *Ment. Hyg.*, 4, 1920, 920-931.

The mental hygiene requirements of a community are: (1) a survey of the management (or mismanagement) of mental hygiene in a community; (2) organization of qualified and responsible persons in order that their sphere of influence in the community may be extended; (3) establishment of local clinics; (4) aid in securing appropriations and statutory provisions. The author treats each of these problems in some detail, offering suggestions as to how the

requirements can be met, in a measure, at least, in every community.

WHEELER (Oregon)

87. BROWN, S., On Social and Medical Aspects of Childhood Delinquency. *J. Amer. Med. Ass.*, 1920, 75, 987-990.

About fifteen thousand New York children appear in the courts annually. Under the National Committee for Mental Hygiene, a physician, a psychologist, and a social worker investigated a group of these children to determine what types constituted the group. Of 150 boys whose cases were studied in detail 50 were found to be nervous. They fall into the following types,—hyper-active, hypo-active, emotional and anxiety. Preventive measures covering the physical, mental and social aspects would have relieved many of these nervous conditions and would have saved the boys from conduct resulting in their being brought into court.

SYLVESTER (Drake)

88. WOODILL, E. E., Public-school Clinics in Connection with a State School for the Feeble-minded. *Ment. Hyg.*, 4, 1920, 911-919.

This paper contains a description of the work done in school clinics in Massachusetts, under the direction of the Massachusetts School for the Feeble-minded at Waverley. It shows what functions a school clinic should exercise in serving the child, the school and the community in a medical, advisory, and educative way.

WHEELER (Oregon)

89. WILLIAMS, F. E., The State Hospital in Relation to Public Health. *Ment. Hyg.*, 4, 1920, 885-896.

The article is an appeal to State Hospitals to enlarge their service to the community beyond that of receiving mental cases. Such hospitals can be the centers for positive constructive contributions, pooling with other organizations the special knowledge which they possess and rendering it for the welfare of the state. As evidence of what psychiatrists have been able to do, by concerted efforts, he cites their part (1) in reducing the number of war prisoners expected to be sent to Fort Leavenworth during the present war from 50,000 to the actual number of about 5,000; (2) in reducing the number of anticipated suicides from over 2,000 to 94 in the A.E.F.; (3) in cutting down the per cent. of insanity in the fighting



forces, and the like. Such leadership as was manifested by the psychiatrists and psychologists in the war, in coping with these problems, should not be relinquished during peace times.

WHEELER (Oregon)

## II. MENTAL DEVELOPMENT IN MAN

90. DAVENPORT, C. B., Heredity of Constitutional Mental Disorders. *Psychol. Bull.*, 1920, 17, 300-310.

This article, like that of Rosanoff in the same journal, evinces an interest in the question as to whether each type of mental disorder is inherited as a unit character or whether any or certain mental disorders, if not due to accident, are the clinical evidence of abnormalities of the cytoplasm of the germ cell or of the chromosomes, conditioning mental disorders in the offspring which may present the same or quite other clinical manifestations.

*Feeble-mindedness*, the author holds, with Goddard, follows Mendelian law, and is due to the absence of a single Mendelian factor. He admits that such analyses as have been made of the pedigrees of the feeble-minded have mostly been scientifically insufficient, yet he holds this result established. "This result seems at first remarkable and almost incredible, but on further consideration, it becomes plausible that the germinal defect results in the insufficient production of some hormone upon which the development of the higher functions depends. If this hormone is insufficient, then the intellectual centers develop each with its idiosyncrasies but cease development prematurely at a certain low level. The consequence is that the feeble-minded of one psychological age differ from each other because their fragmentary intellectual capacities differ as they do among normal people." Mongolian imbecility, formerly asserted to be non-inheritable, has been investigated by Herrman, who finds that careful study usually reveals a neurotic condition in both parents. Brandeis finds amaurotic family idiocy to be a simple Mendelian recessive.

The *epilepsies*, classified by Fischbein in about one hundred groups, give evidence according to an analysis of over 100 cases by Weeks, of being inherited as a simple Mendelism defect. Flood and Collins afford at least partial confirmation of this conclusion. They say "Feeble-mindedness is also associated with epilepsy, and there is some evidence that both are caused by the same defect. Fitting the material to the two hypotheses, first that epilepsy is a

recessive trait that is inherited only as epilepsy and second, that epilepsy, feeble-mindedness and insanity are due to the same defect which may appear in the form of any one of them, there is no striking evidence in favor of one to the exclusion of the other. The truth probably lies some where between the two." Lundborg, in an exhaustive study of myoclonic epilepsy demonstrates that it is a simple recessive Mendelian trait.

*Dementia præcox*, too, is a simple Mendelian recessive. Studies of Riedin, Cannon and Rosanoff, Rosanoff and Orr, Jolly and Witterman, seem to support this conclusion.

*Temperament*.—"That temperament is inherited cannot be doubted." The author finds in a study of his own upon the tendency to periodic outbursts of violent temper, that this trait is a Mendelian dominant. He works out formulæ for expressing the possibilities in the inheritance of choleric, cheerful, phlegmatic, melancholic and nervous temperaments, and their various combinations.

Hunting's *Chorea* is inherited as a dominant disease.

Criminality may be due to one of several causes and its inheritance will follow according to the cause and type.

Consanguinity *per se* is not responsible for mental disorders. If, however, both parents come of of tainted stock and carry some recessive defect, like that which is responsible for feeble-mindedness, epilepsy and depression, the inherited taint will appear in at least one quarter of the children.

WOODS

91. PETERSON, J., Tentative Norms in the Rational Learning Test. *J. of Applied Psychol.*, 1920, 4, 250-257.

A rational learning test is described. Over a hundred students have been tested and the norms calculated.

E. M. ACHILLES

92. REEDY, E. and BRIDGES, J. W., A Short Point Scale for Mental Measurement. *J. of Applied Psychol.*, 1920, 4, 258-262.

An abbreviation of the Point Scale consisting of nine tests with a total score of 50 points is presented. Comparison with the complete scale seems to show that this short scale gives fairly reliable results within the limits of six to twelve years.

E. M. ACHILLES

93. PINTNER, R. and RENSHAW, S., A Standardization and Weighing of Two Hundred Analogies. *J. of Applied Psychol.*, 1920, 4, 263-273.

200 analogies are arranged according to difficulty with the percentile, sigma and point values. The standardization is based on 917 cases. The product moment coefficient of correlation between Otis and analogies scores showed  $r = .785$ .

E. M. ACHILLES

94. BEESON, M. F., Intelligence at Senescence. *J. of Applied Psychol.*, 1920, 4, 219-234.

Twenty inmates, ten men and ten women, of A Home for the Aged were tested by the Stanford revision of the Binet-Simon scale. Average age is 75 years; average mental age is 13-3 and the average I.Q. 82.9. Average age of the men is 80.3 and of women 69.6. Average I.Q. for men is 78.2 as compared with 87.6 of the women. The Homes for the Aged are selective agencies and the old people cared for by even the most selected Home are dull. It is very probable that this dullness is due to a great extent, to a decline in the mental processes at senescence. The reason for the women's I.Q. being higher than the men's is in part due to a slow deterioration of the mental processes of women in old age. It is probably due in part to the fact that women receive less pay for the same quality of work than men, and consequently require greater intelligence than men in order to earn the income necessary for self support.

E. M. ACHILLES

95. MARCUS, L., Vocational Selections for Specialized Tasks—A Study of Selective Tests for Hollerith-Machine Operatives. *J. of Applied Psychol.*, 1920, 4, 186-201.

Candidates for Federal service as operatives of the Hollerith Statistical machine are given Civil Service examination. Experiments show that the coefficient of correlation between Efficiency and the Civil Service examination was .31. The coefficient of correlation between a "Team of 5" psychological tests and efficiency was .45. The Team of 5 can be completed in twelve minutes and can be scored in two minutes.

E. M. ACHILLES

96. MOORE, B. V., General Intelligence Determined by its Weakest Essential Element. *J. of Applied Psychol.*, 4, 155-161.

A chart is presented giving a diagrammatic representation of general intelligence and some arbitrarily selected special abilities. The  $x$ -ordinate or base of the diagram represents the extent of the qualitative variety or the multiplicity of abilities of the total capacity of an individual. The height of the diagram of any particular part represents the quantitative aspect or the amount of any particular ability. A few particular abilities are represented by curves similar to the frequency curves. General intelligence might be represented by a line touching the tips of the particular abilities entering into general intelligence as it is usually considered. The measure of general intelligence might more consistently be represented by the elevation of a straight line drawn as to just touch the top of the curve of the weakest necessary ability. General Intelligence is similar to a chain which is no stronger than its weakest link. Fourteen references are appended.

E. M. ACHILLES

97. FOSTER, J. C., Significant Responses in Certain Memory Tests. *J. of Applied Psychol.*, 1920, 4, 142-155.

The experienced clinical psychologist sometimes reports that something is queer about a mental examination-even when a low rating is given the patient is not believed to be feeble-minded. An attempt is made to get a numerical statement for this "queerness" so that the psychologist may recognize certain cases as cases properly to be referred to a psychiatrist. Certain memory tests were used and the following conclusions drawn: there is no evidence that the insane give responses in the memory span for digits or sentences which are markedly different from those given by normal persons of the same mental and chronological ages. The responses given by the insane in the tests for memory drawings and memory for short paragraphs are less adequate than those given by the normal and feeble-minded of the same mental and chronological ages. In certain types of insanity there are significant responses not indicated in the score, such as extreme size and irrelevant details in the case of the memory drawings, and numerous errors and additions in the reports of the paragraph selections.

E. M. ACHILLES

98. FREEMAN, F. N., Clinical Study as a Method in Experimental Education. *J. of Applied Psychol.*, 1920, 4, 126-141.

The paper presents some reflections upon the relationship between group study and individual study as a method of educational investigation. As an illustration an analytical study of a case of alexia is described. The patient, a girl of 9½ years was in the fourth grade. She was unable to read and unfit for to do the work of the grade. The child was found to be of normal intelligence. No difficulties were observed in auditory speech and she was able to reproduce from auditory presentation. The child showed difficulty in the visual language tests. The words *the*, *and*, and *tone* were spelled correctly and fairly readily, but there was difficulty with *horse* and *house*. The difficulty seemed to be connected with the translation between visual and sound symbols. Photographic records of the eye movements in reading both before and after treatment are reproduced. The conclusion drawn was that phonetic drill had been used beyond the point where it was useful. The treatment attempted to develop more direct associations between sight of words and their meaning. For a time phonetic analysis was abandoned. The treatment is described in detail. The conclusion is that it is justified to raise a serious question whether there is such a thing as specific congenital word blindness or alexia. We should keep in mind continually that it is individuals with whom we are to deal and that our conclusions should always be in terms of individuals.

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99. ROSENOW, C., The Stability of the Intelligence Quotient. *J. of Delinq.*, 1920, 5, 160-173.

Does the intelligence quotient of a child decrease with chronological age? This paper examines the logical presuppositions underlying this belief and concludes from experimental evidence based on Wallin's data (649 cases, single examinations) that "neither the facts nor the arguments we have examined so far justify the conclusion that there is a type of individual whose I.Q. tends to decrease with increasing age." A study of 69 cases, some of whom were reexamined once by the Stanford scale and others reexamined once by the Binet scale, 1911, by six different psychologists, gives an average I.Q. of 80.391 for the first examination and 80.754 for the second. For patients of the Institute for Juvenile Research, Chicago, "there is no tendency for the I.Q. to deteriorate regardless of the age of the patient."

BALDWIN (Iowa)



100. PROCTOR, W. M., The Use of Psychological Tests in the Vocational Guidance of High-School Pupils. *J. of Ed. Res.*, 1920, 2: 533-546.

This is the third and last of a series of articles bearing upon the practicability of psychological tests in determining the pedagogical and social fitness of pupils in the secondary schools. The first article dealt with predictions of school success, the second with the possibilities of testing in relation to educational guidance, and this, the third, with the value of intelligence testing for vocational guidance.

An interesting attempt is made to determine the intelligence found functioning on various occupational levels, carrying forward the results of the army mental tests, and attempting some correlation between the actual intelligence of 930 high school pupils and the intelligence necessary for average success in the occupations of their choice. An analysis of the situation reveals many pupils aiming too high for their mental power, and others aiming too low. On the whole choices seem haphazard, and out of proportion with either the needs of the locality from which the children come, or of the nation.

The author concludes that "the employment of psychological tests as an aid in vocational guidance is in the early experimental stage, but sufficient progress has been made to justify their use in a negative way, i.e., as a means of discovering to the counselor the kinds of occupations that a given high-school pupil would probably better avoid."

KOHS (Portland, Ore.)

101. BUCKINGHAM, B. R. and MONROE, W. S., A Testing Program for Elementary Schools. *J. of Ed. Res.*, 1920, 2, 521-532.

To those interested in group tests this article introduces the "Illinois Examination" Parts I and II. The tests comprise the following material:

(1) *An Intelligence Test*, composed of seven sub-tests, namely, analogies, arithmetical problems, sentence vocabulary, substitution, verbal ingenuity, arithmetical ingenuity, and synonym-antonym.

(2) *A Revision of Monroe's Standardized Silent Reading Test*. This test yields measures both of rote and of comprehension.

(3) *A Test of Ability in the Operations of Arithmetic*. In Part I there are eight sub-tests,—four on the combinations, and four involving simple examples in each operation. In Part II there

are seven sub-tests,—column addition, long multiplication, long division, subtraction, addition and subtraction of fractions, multiplication and division of fractions, division of decimals.

Part I is intended for application in grades III, IV and V, and Part II for grades VI, VII and VIII.

Although the total time required for giving either of the two parts is approximately one hour, the actual working time for Part I is 27 minutes, and for Part II, 37½ minutes.

Record sheets and the handbook of instructions accompany the test material which may be ordered from the Public School Publishing Co., Bloomington, Ill.

The outstanding advantage claimed for this group test is the assembling within the covers of one examination-booklet both intelligence and subject-matter tests. Thus after one-hour's examination, the I.Q.'s (intelligence quotients) and A.Q.'s (achievement quotients) for a group of children are immediately obtainable. This form of examination, therefore, measures on the one hand *ability* to learn, and on the other amount of routine pedagogical *knowledge* already *acquired*.

KOHS (Portland, Ore.)

102. GRAY, C. T., Educational Psychology. *Psychol. Bull.*, 1920, 17, 375-387.

"The outstanding features of the literature in educational psychology for the past year may be summarized as follows: (1) No decrease is to be noted in the interest shown in educational tests and measurements. Several new scales and tests have appeared along with articles which attempt careful and detailed interpretations of data collected by means of the earlier tests and scales. Interest in this type of work among those who are concerned with the subject-matter of various subjects rather than with psychology seems to be increasing. (2) Many articles have appeared which are concerned with intelligence tests as a basis for educational procedure. (3) Clinical methods for diagnosing difficulties in particular school subjects has been discussed briefly. (4) The proper instruction of bright children has received the attention of a few investigators."

This summary is based on a review of 103 articles, monographs and books, dealing with educational tests, gifted children, intelligence tests and psychology of school subjects. Seashore's *Psychology of Musical Talent* is mentioned as the most noteworthy special treatise.

WOODS

103. PRESSEY, S. L., Suggestions Looking Toward a Fundamental Revision of Current Statistical Procedure, as Applied to Tests, *Psychol. Rev.*, 1920, 27, 466-472.

The author briefly criticises the concepts of "reliability" and "validity" as applied to tests, and the use of the normal curve in practical problems of classification. It is suggested that all methods of testing be made subservient to the solution of specific practical problems.

YOUNG (Minnesota)

104. THEISEN, W. W., Provisions for Individual Differences in the Teaching of Reading. *J. of Ed. Res.*, 1920, 2: 560-571.

Beginning with the statement that standardized tests have everywhere revealed wide differences in reading ability, responses to a circular letter addressed to teachers and supervisors are analyzed to determine first, what provisions for individual differences are employed by teachers generally considered successful in the teaching of reading, and second, what suggestions for the less experienced teacher can be gained from this study.

Both extra-classroom and intra-classroom provisions were found. Among the first may be enumerated, (1) attention to physical needs, (2) a flexible system of promotions. Among the second are procedures classifiable under seven headings: (1) testing of individual abilities, (2) grouping of pupils within the classroom, (3) gradation of materials, (4) variation in amount of reading practice, (5) personal attention given to individuals, (6) adaptation to and development of individual interests, (7) specific forms and phases of instruction,—so-called "methods."

The analysis reveals that but a very small proportion of teachers have anything like an adequate comprehension of the problem confronting them.

After discussing the various provisions rather fully, the author suggests the following as possessing the greatest merit: silent reading, voluntary reading in free periods, special help for specific pupils in small groups by ability, material graded to individual ability, thought drills, tests of rote and comprehension, materials chosen according to individual interests, problem assignment and intelligence tests.

KOHS (Portland, Ore.)

105. BASSETT, D. M. and PORTEUS, S. D., Sex Differences in Porteus Maze Test Performance. *Training Sch. Bull.*, 1920, 17.

A review of the tests reported by many led to the conclusion made by Thorndike that the differences of man from man and of woman from woman are as great as the differences between man and woman. The comparison of brain growth in the male and female is quoted from the work of Berry and Porteus. Advantages are fairly well balanced, the superiority if any being in favor of the girl. It is evident that the mental correlates for the increased post pubescent brain development must be looked for outside the field of learning capacity.

Sex differences in the Porteus graded maze tests are studied. These tests are said to reflect the subjects forethought, planning capacity, mental alertness, to inhibit impulsive action, to resist misleading suggestions and to prove the capacity for speedy and successful adjustment to a concrete situation new to experience. The boys are able to complete the task successfully in less time than do the girls and generally speaking with less errors in working.

At 14 an average of 62.7 per cent of the boys have scores better than the median for girls, 30.06 per cent. have scores better than the 75 percentile for girls. At 15, 64.9 per cent. of the boys score better than the median for girls. At 17 the boys outstrip the girls more than at any other age. The boys have the smallest advantage at 14.

It is concluded by the authors that in the capacities involved in the solution of the maze problem boys tend to exceed girls, both as regards speed and accuracy, the advantage being more marked in speed. A bibliography is appended.

E. M. ACHILLES

## 12. MENTAL EVOLUTION

106. ALLARD, H. A., The Flight of Fireflies and the Flashing Impulse. *Science*, 1920, 52, 539-540.

The flight movements of fireflies and their flashing bear some relation to each other. Each is attended by a sudden upward flight impulse.

RICH (Pittsburgh)

107. ALLARD, H. A., Some Observations Concerning the Periodical Cicada. *Amer. Natural*, 54, 1920.

This paper describes some casual experiments which showed that the pupae of the periodical cicada are evidently negatively phototrophic. Further experiments on pupae were designed to ascertain why, after being taken from their normal surroundings and not allowed to crawl up into trees and bushes, metamorphosis was inhibited but the experiments were unsuccessful. The songs of certain species are compared and an unusual night concert described, in which the singing commenced with two individuals and ultimately spread over a wide territory.

WHEELER (Oregon)

108. CHIDESTER, F. E., The Behavior of *Fundulus heteroclitus* on the Salt Marshes of New Jersey. *Amer. Natural*, 54, 1920.

The author has described the migrations of this fish in the Spring from salt water to fresh water marshes, their behavior in the marshes during the summer and the return to salt water in the fall. Climatic and food conditions seem to determine these migrations. One of the principle foods of this fish consists of the salt marsh mosquito.

WHEELER (Oregon)

109. GRIFFITH, C. R., The Effect upon the White Rat of Continued Bodily Rotation. *Amer. Natural*, 54, 1920, 524-534

The chief purpose of this investigation was to ascertain the effect of regular and continued repetition of bodily rotations upon ocular movements. Certain medical men (*J. of Amer. Med. Ass.*, 1919, Vol. 72, 779ff) have attacked the experimental findings that "after-nystagmus" disappears wholly or in part when individuals become accustomed to turning movements. This criticism is based upon the calling into question the stability, permanency and constancy of reflex action; for without these characteristics reflex action can no longer be held as reliable clinical phenomena. The author experimented on white rats which were unusually good subjects because of their docility and their lack of distant and foveal vision. A rat was placed upon a pivoted wooden platform and under a glass bell-jar. The entire apparatus was revolved by means of a small motor. The number and frequency of eye-movements was recorded by means of an electric signal marker which registered upon a revolving smoked drum. In preliminary



trials it was found that the appearance of nystagmus was directly proportional to the number and speed of the rotations. Ten trials of ten rotations each were repeated two or three times a day, with a speed of approximately ten revolutions per second, in the main series of experiments. Here it was not only found that there was a rapid decrease in the after-nystagmus from day to day but that also there was a general decrease in the duration of the nystagmus within any single day's turning. Two females, rotated during the period of gestation, showed greater tendencies toward nystagmus than the other rats. Nystagmus was invariably longer in morning than in evening tests. Tendencies toward defecation, micturation, violent trembling, refusal to eat immediately after a test, to move in the opposite direction of rotation during the test with reversal of these movements at the end of the test, assuming a "rotation posture," inhibition of the scratch reflex, were additional phenomena all of which disappeared or tended to disappear along with the nystagmus. Thus it would seem that nystagmus is closely related to other organic responses and, like these other responses, is due to a large group of undetermined factors. The attempt of recent investigators to explain away the disappearance of after-nystagmus in human subjects by charging that the subjects were pathological or that a few subjects were gazing upon distant objects can hardly be applied to white rats.

WHEELER (Oregon)

## NOTES AND NEWS

BRYN MAWR COLLEGE seeks an instructor in psychology for the following courses during the absence of Professor J. H. Leuba, who will be on sabbatical leave in 1921-1922: *A*, General Introductory Psychology (to be taught in two sections); *B*, Instinct and Emotion; Comparative Psychology (chiefly animal behavior); *C*, Social Psychology (or some other suitable topic may be substituted). All courses are undergraduate, and half-year; each is scheduled for five hours. The appointee will be relieved of all or nearly all graduate work. The salary offered is \$2,500. Applications or communications regarding the position should be addressed to Professor J. H. Leuba, Bryn Mawr College, Bryn Mawr, Pa.

At the Christmas meetings of the American Psychological Association held at the University of Chicago, the following officers were elected: President, Margaret Floy Washburn, Vassar College; Members of the Council, 1921-1923, George F. Arps, Ohio State University, Walter S. Hunter, University of Kansas; Division of Anthropology and Psychology, National Research Council, Walter B. Pillsbury, University of Michigan, George M. Stratton, University of California. Edwin G. Boring, Clark University, continues as Secretary-Treasurer.

THE American Psychological Association will hold its thirtieth annual meeting at Princeton on December 28, 29 and 30, 1921.

THE death is announced at the age of seventy-six years of Dr. Theodore Flournoy, formerly professor of physiology and psychology at the University of Geneva.

At the Chicago meeting of the American Association of the Advancement of Science the following vice-presidents of sections were elected: Psychology, E. A. Bott, University of Toronto; Education, Guy M. Whipple, University of Michigan.

DR. FRANK H. REITER, of the University of Pennsylvania, has been appointed psychologist in the public school system at Newark, New Jersey.

